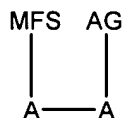


We claim:

1. A method of modifying a metallic surface comprising contacting the metallic surface with an asymmetric monolayer forming species having the formula:



10 wherein

A is an attachment linker moiety;

MFS is a monolayer forming species; and

AG is an electroconduit forming species.

2. A method according to claim 1 further comprising contacting said metallic surface with a biological species having the formula:

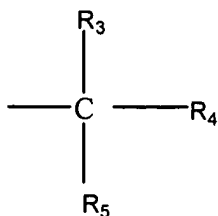
A-MFS-capture binding ligand

wherein

A is an attachment linker; and

MFS is a monolayer forming species.

3. A method according to claim 2 wherein said capture binding ligand is a nucleic acid.
4. A method according to claim 2 wherein said capture binding ligand is a protein.
5. A method according to claim 1 wherein A is sulfur.
6. A method according to claim 1 wherein said metallic surface is gold.
7. A method according to claim 1 wherein said MFS is an insulator.
8. A method according to claim 7 wherein said insulator comprises an alkyl group from about 7 to 20 carbons.
9. A method according to claim 8 wherein said alkyl group comprises a heteroalkyl.
10. A method according to claim 8 wherein said alkyl group comprises a substituted alkyl.
11. A method according to claim 1 wherein said AG comprises an alkyl group from about 1 to 6 carbons.
12. A method according to claim 1 or 11 wherein said AG is branched, having the formula:



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wherein

R_3 through R_5 are independently selected from the group consisting of hydrogen, alkyl, aryl, alcohol, amine, amido, nitro, ether, ester, ketone, imino, aldehyde, alkoxy, carbonyl, halogen, sulfur containing moiety and phosphorus containing moiety;

- 10 13. A method according to claim 12 wherein said AG is attached to said attachment linker via a $(CH_2)_n$ group, wherein n is an integer from 0 to 4.
14. A method according to claim 12 wherein said AG is attached directly to said attachment linker.